First Amendment: Clean Claims

1. A vehicle-mounted device for capturing video imagery in response to a triggering event, comprising:

a housing ;

an image sensor mounted to said housing, said image sensor sensing optical phenomena representing said video imagery;

a data sensor circuit within said housing and in part responsive to said triggering event; and

a capture circuit within said housing; said capture circuit comprising:

a non-volatile memory; and

a volatile, random-access memory configured as a continuous-loop buffer; said volatile memory coupled to said non-volatile memory and coupled to said image sensor; said volatile memory capturing a signal representing said video imagery from said image sensor in a first-in, first-overwritten manner, and, responsive to said data sensor circuit sensing a triggering event, terminating capture of said signal and copying the captured signal representing said video imagery to said non-volatile memory.

2. The vehicle-mounted device claimed in claim 1, wherein said capture circuit terminates capture of said signal a predetermined time interval after occurrence of said triggering event.

3. The vehicle-mounted device claimed in claim 1, wherein said capture circuit comprises a digital recording circuit having a digital memory and records said signal representing said video imagery.

4. The vehicle-mounted device claimed in claim 3, wherein said capture circuit further records a signal representing data produced by said data sensor circuit.

5. The vehicle-mounted device claimed in claim 1, wherein said capture circuit comprises a transmitter transmitting a signal representing said video imagery to a remote location.

6. The vehicle-mounted device claimed in claim 5, wherein said transmitter transmits said signal in real-time.

7. The vehicle-mounted device claimed in claim 1, wherein said data sensor circuit comprises a sensor responsive to a change in force experienced by said device.

8. The vehicle-mounted device claimed in claim 7, wherein said data sensor circuit comprises a forward sensor responsive to a change in force experienced by said device in a direction substantially perpendicular to a direction of elongation of said housing and a lateral sensor responsive to a change in force experienced by said device in a direction substantially parallel to said direction of elongation of said housing.

9. The vehicle-mounted device claimed in claim 1, wherein said image sensor is disposed behind ~~said~~ a mirror and senses said optical phenomena transmitted through a portion of said mirror.

10. The vehicle-mounted device claimed in claim 9, wherein said portion of said mirror is half-silvered and partially transmits and partially reflects said optical phenomena to provide said mirror with a uniformly mirrored appearance.

11. The vehicle-mounted device claimed in claim 9, wherein said portion of said mirror is transparent.

12. The vehicle-mounted device claimed in claim 1, wherein said image sensor is oriented to sense ~~optical~~ the optical phenomena impinging upon it from a direction substantially perpendicular to a direction of elongation of said housing.

13. The vehicle-mounted device claimed in claim 12, wherein said image sensor comprises first and second portions, said first portion oriented to sense the optical phenomena impinging upon it from a direction substantially perpendicular to a direction of elongation of said housing, said second portion oriented to sense the optical phenomena impinging upon it from a direction substantially perpendicular to a direction of elongation of said housing and axially opposite said direction from which said optical phenomena impinges upon said first portion.

14. The vehicle-mounted device claimed in claim 13, wherein said first portion of said image sensor is disposed behind ~~said~~ a mirror and senses said optical phenomena transmitted through a portion of said mirror.

15. The vehicle-mounted device claimed in claim 1, wherein:

said data sensor circuit further comprises a global positioning system (GPS) receiver identifying a geographic position of said vehicle-mounted device; and

said capture circuit further records a signal representing said geographic position.

16. The vehicle-mounted device claimed in claim 1, wherein:

said data sensor circuit further comprises a microphone; and

said capture circuit further records a signal representing ~~said~~ a sound impinging upon said microphone.

17. A vehicle-mounted device for capturing video imagery in response to a triggering event, comprising:

a housing having a generally elongated shape;

a rear-view mirror mounted to said housing and having a generally elongated shape;

an image sensor mounted to said housing, said image sensor sensing optical phenomena representing said video imagery;

a data sensor circuit within said housing and in part responsive to said triggering event; and

a capture circuit within said housing; said capture circuit comprising:

a non-volatile memory; and

a volatile, random-access memory configured as a continuous-loop buffer; said volatile memory coupled to said non-volatile memory and coupled to said image sensor; said volatile memory capturing a signal representing said video imagery from said image sensor in a first-in, first-overwritten manner, and, responsive to said data sensor circuit sensing a triggering event, terminating capture of said signal and copying the captured signal representing said video imagery to said non-volatile memory.

18. The vehicle-mounted device claimed in claim 17, wherein said capture circuit terminates capture of said signal a predetermined time interval after occurrence of said triggering event.

19. The vehicle-mounted device claimed in claim 17, wherein said capture circuit comprises a digital recording circuit having a digital memory and records said signal representing said video imagery.

20. The vehicle-mounted device claimed in claim 19, wherein said capture circuit further records a signal representing data produced by said data sensor circuit.

21. The vehicle-mounted device claimed in claim 17, wherein said capture circuit comprises a transmitter transmitting a signal representing said video imagery to a remote location.

22. The vehicle-mounted device claimed in claim 21, wherein said transmitter transmits said signal in real-time.

23. The vehicle-mounted device claimed in claim 17, wherein said data sensor circuit comprises a sensor responsive to a change in force experienced by said device.

24. The vehicle-mounted device claimed in claim 23, wherein said data sensor circuit comprises a forward sensor responsive to a change in force experienced by said device in a direction substantially perpendicular to a direction of elongation of said housing and a lateral sensor responsive to a change in force experienced by said device in a direction substantially parallel to said direction of elongation of said housing.

25. The vehicle-mounted device claimed in claim 17, wherein said image sensor is disposed behind said mirror and senses said optical phenomena transmitted through a portion of said mirror.

26. The vehicle-mounted device claimed in claim 25, wherein said portion of said mirror is half-silvered and partially transmits and partially reflects said optical phenomena to provide said mirror with a uniformly mirrored appearance.

27. The vehicle-mounted device claimed in claim 25, wherein said portion of said mirror is transparent.

28. The vehicle-mounted device claimed in claim 17, wherein said image sensor is oriented to sense the optical phenomena impinging upon it from a direction substantially perpendicular to a direction of elongation of said housing.

29. The vehicle-mounted device claimed in claim 18, wherein said image sensor comprises first and second portions, said first portion oriented to sense the optical phenomena impinging upon it from a direction substantially perpendicular to a direction of elongation of said housing, said second portion oriented to sense the optical phenomena impinging upon it from a direction substantially perpendicular to a direction of elongation of said housing and axially opposite said direction from which said optical phenomena impinge upon said first portion.

30. The vehicle-mounted device claimed in claim 29, wherein said first portion of said image sensor is disposed behind ~~said~~ mirror and senses said optical phenomena transmitted through a portion of said mirror.

31. The vehicle-mounted device claimed in claim 17, wherein:

said data sensor circuit further comprises a global positioning system (GPS) receiver identifying a geographic position of said vehicle-mounted device; and

said capture circuit further records a signal representing said geographic position.

32. The vehicle-mounted device claimed in claim 17, wherein:

said data sensor circuit further comprises a microphone; and

said capture circuit further records a signal representing ~~said~~ a sound impinging upon said microphone.

33. A method for capturing video imagery in a vehicle-mounted system in response to a triggering event, said system comprising a rear-view mirror device mounted upon a windshield of a vehicle, said rear-view mirror device having a housing with a generally elongated shape, a mirror assembly mounted to said housing and having a generally elongated shape, an image sensor mounted to said housing and sensing optical phenomena representing said video imagery, a data sensor circuit within said housing, and a capture circuit within said housing; said capture circuit comprising: a non-volatile memory; and a volatile, random-access memory configured as a continuous-loop buffer; said volatile memory coupled to said non-volatile memory, the method comprising the steps of:

using said image sensor sensing optical phenomena transmitted through a portion of said mirror assembly and representing said video imagery; ~~and~~ using said capture circuit capturing said video imagery in said volatile, random-access memory in a first-in, first-overwritten manner, and, responsive to said data sensor circuit sensing a triggering event, terminating capture of ~~said~~ a signal representing said video imagery and copying the captured signal representing video imagery to said non-volatile memory.

34. The method claimed in claim 33, further comprising the step of transmitting ~~a~~ said signal representing said video imagery to a remote location.

35. The method claimed in claim 33, wherein said step of terminating capture of said signal representing said video imagery comprises terminating capture of said signal in response to a change in force experienced by said device.

36. A method for capturing video imagery in a vehicle-mounted system in response to a triggering event, said system comprising a rear-view mirror device mounted upon a windshield of a vehicle, said rear-view mirror device having a housing with a generally elongated shape, a mirror assembly mounted to said housing and having a generally elongated shape, an image sensor mounted to said housing and sensing optical phenomena representing said video imagery, a data sensor circuit within said housing, and a capture circuit within said housing; said capture circuit comprising: a non-volatile memory; and a volatile, random-access memory configured as a continuous-loop buffer; said volatile memory coupled to said non-volatile memory, the method comprising the steps of:

using said image sensor sensing optical phenomena representing said video imagery impinging upon it from a direction substantially perpendicular to a direction of elongation of said housing and forwardly through said windshield of said vehicle and said video imagery impinging upon it from a direction substantially perpendicular to a direction of elongation of said housing and rearwardly with respect to said vehicle; ~~and~~ using said capture circuit capturing said video imagery in said volatile, random-access memory in a first-in, first-overwritten manner, and, responsive to said data sensor circuit sensing a triggering event, terminating capture of ~~said~~ a signal representing said video imagery and copying the captured signal representing video imagery to said non-volatile memory.

37. The method claimed in claim 36, further comprising the step of transmitting ~~a~~ said signal representing said video imagery to a remote location.

38. The method claimed in claim 36, wherein said step of terminating capture of said signal representing said video imagery comprises terminating capture of said signal in response to a change in force experienced by said device.

39. A method for mounting a system for capturing video imagery in response to a triggering event, comprising the ~~step~~ steps of mounting upon a vehicle windshield a device comprising a housing, an image sensor mounted to said housing ~~and~~ for sensing optical phenomena representing said video imagery, a data sensor circuit within said housing responsive to said triggering event, and a capture circuit within said housing; said capture circuit comprising: a non-volatile memory; and a volatile, random-access memory configured as a continuous-loop buffer; said volatile memory coupled to said non-volatile memory and coupled to said image sensor; said volatile memory capturing a signal representing said video imagery from said image sensor in a first-in, first-overwritten manner, and, responsive to said data sensor circuit sensing a triggering event, terminating capture of said signal and copying the captured signal representing said video imagery to said non-volatile memory.

40. The method claimed in claim 39, wherein said housing has a generally elongated shape, said device further comprises a suction-cup attached to said housing and a mirror having a generally elongated shape mounted to said housing, and said mounting step comprises the step of adhering said device to said windshield.

41. The method claimed in claim 39, wherein said mounting step comprises the step of engaging said suction-cup upon said windshield.